

ORIGIN AND BEHAVIOUR OF POST-LARVAL PENAEID PRAWNS IN TWO ESTUARIES ON THE NATAL COAST OF SOUTH AFRICA

The northern Natal coast is the southern limit of commercially viable populations of penaeid prawns on the east coast of Africa. The major centres of abundance are the St Lucia lakes and Richards Bay and the offshore Tugela Bank. The major commercial species are *Penaeus indicus*, *Metapenaeus monoceros* and *P. monodon*.

The Natal fishery is associated with soft substrata and turbid water conditions. This type of habitat is relatively common in Natal estuaries but is less common in the offshore habitat where the shallow Tugela Bank is separated from the Mocambique grounds by some 400 km of deep, clear water overlying sandy substrata.

Links between Mocambique and Natal prawn stocks are unclear. The southward flowing Agulhas current could provide a larval input which would influence population fluctuations in Natal. There is however, no information on the occurrence of post-larvae in this part of the Agulhas current. As there does not appear to be any indication that post-larvae are capable of selecting specific estuaries it was assumed that larvae migrating into estuaries are representative of offshore populations. Plankton samples were taken overnight during spring flood tides at St Lucia on the northern edge of the

Tugela Bank and also at the Agulhas dominated Kosi Bay just south of the Mocambique border. Some ebb tide sampling was also done to provide comparative data on tidal behaviour in the turbid St Lucia and clear Kosi systems.

Post-larvae of *P. japonicus*, a commercially unimportant species in Natal, totally dominated samples at Kosi Bay. Similar densities of this species were recorded at St Lucia but it was matched by the numbers of *P. indicus* while *P. monodon*, *P. semisulcatus* and *M. monoceros* were also regularly present. The numbers of *P. japonicus* at St Lucia suggest a possible influence of the Agulhas current on recruitment but the other species recorded in this system indicate an additional larval source. It is significant that the additional species are commercially important and that these appear to be derived from Natal waters rather than further north.

Only *P. japonicus* occurred in sufficient numbers to allow comparison of post-larval tidal behaviour in both areas. This psammophilic species was present in the water column over flood and ebb tides in the muddy St Lucia system but in negligible numbers over ebb tides in the sandy Kosi estuary. Movement into the water column thus seems to be influenced not only by the presence of tidal currents but also by the nature and suitability of the substratum.

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LABORATORY REARED LARVAL STAGES OF A MANGROVE CRAB, *SESARMA EDWARDSI* DE MAN 1887 (DECAPODA : GRAPSIDAE)

The complete larval development of a mangrove crab, *Sesarma edwardsi*, has been described from animals reared under laboratory conditions at a temperature of $26 \pm 1^\circ\text{C}$ and a salinity of 25 p.p.t. Larvae were fed freshly hatched *Artemia* nauplii daily. Four zoeal stages and a megalopa appeared prior to metamorphosis to the first crab stage. Development time through to this stage was 16 days, intervals between zoeal stages being 2 days except the final zoea (3 days) and

megalopa (7 days). Unlike other species of *Sesarma*, brightly coloured chromatophores throughout the body in all larval stages are characteristic of *S. edwardsi*. The setal formula of 0, 0, 6 on the endopod of the second maxilliped of zoeal stages, and the presence of 4 lateral setae on the telson separate *S. edwardsi* from others of the genus so far described.

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